

REDUCING THE RESPONSE BURDEN FOR ECONOMIC SURVEYS: THE DUTCH SITUATION

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ABSTRACT

The burden for enterprises of filling out forms is receiving more and more attention. In The Netherlands it has also become a political issue. Part of this is caused by statistics. Statistics Netherlands made proposals to reduce the burden with 12 percent between the beginning of 1994 and the end of 1997, to the Minister of Economic Affairs who has the political and budgetary responsibility for the statistical office. In addition, Statistics Netherlands has formulated a strategic plan, still under discussion, which must lead to a business plan. For the medium and long term, drastic, but challenging changes are foreseen for the way the statistical office will get its input data.

Not only real costs for the enterprises, but also the perception of burden has to be reduced. Developments in technology and automation give a lot of challenges. The use of data already collected for other purposes will be easier. Studies are done on the use of fiscal data and of other administrations as alternatives for surveying by questionnaires. Electronic Data Interchange is on its way. Special tools must be developed, for example tools related to the Business Register. But automation is not the only solution. Surveys should be more friendly for and easier on the respondents. Double questioning must be avoided. Requested data should be derived more directly from bookkeeping and administrations of the enterprises.

But how does one measure the level of burden and the reduction of it?

KEYWORDS:

Response burden, Form-filling burden, Enterprise burden, Burden measurement, Methods for data collection.

1. INTRODUCTION

Already in the mid of the eighties, Statistics Netherlands is started to focus on the growing problem of response burden for society and for the enterprises in particular caused by data collection for statistics. In recent years this has also become a political issue. Recently targets were formulated for all governmental administrations. Compared with the beginning of 1994 the burden for private enterprises caused by data collection for statistics must be reduced with at least 12 percent before the end of 1997, without loss of quality. In debates in Dutch Parliament even a proposal was put forward for a 20% reduction but this proposal was not approved, since it was agreed to wait for the results of the first target.

A central government Committee has been installed to monitor the progress of reduction. All government Administrations must report on progress to this Committee periodically. Statistics Netherlands has also set up a Committee for policy-making and checking the introduced processes for reducing the burden. A separate unit is going to be set up for measuring and monitoring the burden.

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This paper will only deal with the response burden as a result of data collection for economic statistics, especially form-filling burden. Many papers and articles on the item have been produced by National Statistical Institutes and by International Bodies such as Eurostat. The topic was also the main theme during the last Roundtable on Business Registers, held in Orebro, Sweden, in September 1995. The intention of this paper is not to give an exhaustive compilation and overview of the available literature. The main goal of this paper is to describe the Dutch situation and the research agenda on the item at Statistics Netherlands.

The reduction of the response burden is high on the agenda of Statistics Netherlands. It was discussed during the preparatory stage of the recent reorganisation, the so-called TEMPO-reorganisation. Many ideas were put forward, resulting, for example, in a special Division for Data Collection for implementing an optimal respondent-oriented and respondent-friendly data collection policy. Last year, a draft a strategic plan was completed. Part of it is a publication called: "From factory of figures to junction on the Electronic Highway". That title, to be considered as a mission statement, sets the scene for the future. High expectations are put on the possibilities and challenges of the developments in the area of the information technology. The publication describes a double transformation process. Using the possibilities of the technology both the input side and the output side of the statistical process will change dramatically in the future. At the input side this will lead to more and better data with less burden for enterprises. At the output side the supply of statistical information will be more flexibel and more user-friendly.

But for the near future other measures and changes are necessary to meet the reduction of the response burden.

Paragraph 2 deals with the definition or description of the phenomenon response burden in the context of the statistical programme and the role of Statistics Netherlands.

Paragraph 3 deals with the ways and methods of measuring the burden and the necessary instruments to monitor the (reduction of the) burden.

Paragraph 4 will focus on the instruments to reduce the burden in general.

The use of primary and secondary EDI (Electronic Data Interchange) and EDC (Electronic Data Capture) as important burden reducing instruments are dealt with in paragraph 5.

The impact on the quality of the statistics will be the subject of paragraph 6. In this context the changed requirements for the Statistical Business Register are also considered.

Finally in paragraph 7 the agenda on future research and implementation at Statistics Netherlands will be considered.

2. A CLOSER LOOK AT THE PHENOMENON RESPONSE BURDEN

Statistical information is essential in a modern society. The challenge is to maximise the usefull effect of the budget assigned for providing statistical information. The national official task for providing society with statistical information is centralised in The Netherlands at Statistics Netherlands, in Dutch: "Centraal Bureau voor de Statistiek (Central Bureau of Statistics)". This has advantages because it makes coordination and integration into coherent systems possible. It also could lead to the misleading conclusion that all statistical data collection is to be done by this office, although a lot of other institutions are collecting data such as commercial institutes,

provincial and municipal bodies, schools and universities (students).

The useful effect of the budget can be defined as the difference between the valuation of the statistical output and the level of the costs, that is the costs of data collection, processing and dissemination. In the context of reducing response burden, optimising this difference does not necessarily lead to a reduction. It is also very difficult to define comparable unit values for the input and the output side. Statistics Netherlands chose to maximise the output valuation and to minimise the costs separately. One of the cost components is the burden on respondents for providing input data. In the context of a policy to reduce response burden, this component can be dealt with separately again in a minimising process, and with priority within requirements of quality of statistics and the agreed statistical programme. In a total view, this approach might seem to be a kind of suboptimisation. More narrowly considered, the providers costs of the non governmental and non subsidised enterprises and institutions, that is the private enterprises and institutions in particular, must be minimised irrespective of the benefits those enterprises get from the statistical information disseminated by the statistical office. This approach is mainly a rational one.

There are also less rational components which influence the burden. The image of the office is one. It is the task of the statistical office to improve that image which can lead to a decline of the perceived burden. This aspect will only be dealt with incidentally. A captain of industry recently spoke words like: "You can not eat perception, only tangible results count!". Still the perception effects should not be underestimated, especially at the micro-level, that is at the level of the individual enterprises and their associations. A bad perception has a negative effect on willingness to respond and on the quality of the data supplied.

At the macro-level it is less clear what is to be concluded on perception except the willingness to assign budgets to the statistical office.

Unfortunately enterprises generally make no distinction between the various kinds of burden, for example between administrative data provision to fulfill regulations and data delivery for statistics. Both kinds lead to filling out a lot of forms. Moreover, form-filling because of regulations seems to be more accepted by enterprises than form-filling for statistical purposes.

A separate view on burden for the various administrations within the government also leads to suboptimisation. If there is a statistical use for administrative registrations which exist for the regulations, a policy of deregulation can lead to an increase in statistical response burden necessarily. In such cases, a proper balance must be found before making a decision on changes of regulations.

In order to set goals regarding burden reduction, burden must be quantified in such a way that its development can be monitored, which makes it possible to judge or the goals for reduction are reached.

As a starting point, the number of questionnaires to be filled out by an enterprise can give a first idea of response burden. In table 1 an indication is given for the enterprises by size-class of employment of enterprises with reference year 1991.

The table shows that the macro burden must increase in a situation of an increasing number of enterprises. The number of forms to complete increases according to the size of enterprises because of stratification effects. The sampling ratio increases according to the size. Above a certain size, full enumerations are usual. In the next paragraph a more accurate way of measuring the burden will be dealt with.

Tabel 1: Average number of questionnaires per year per enterprise*)
(monthly and quarterly forms counted for 12 and 4, respectively)

Branch **)	Number of employees								
	1	2-<5	5-<10	10-<20	20-<50	50-<100	100-<200	200-<500	>500
0 Agriculture	3	3	3	4	5	10	11	12	17
1 Mining	11	10	13	20	30	26	27	30	30
2/3 Manufacturing	2	2	2	9	25	32	40	44	48
4 Electricity, gas, water	13	17	25	23	38	30	29	30	33
5 Construction	1	1	1	3	10	14	23	29	33
6 Trade, hotels	1	2	3	6	11	15	18	22	27
7 Transport, communication	1	1	2	3	4	8	12	13	15
8 Commercial services	1	1	2	3	7	11	15	15	20
9 Other services	1	1	1	4	4	7	9	13	16

*) Excluding foreign trade

**) According the Standard Industrial Classification, by which each statistical unit is classified by its main activity

The total number of questionnaires mailed out to enterprises each year is about 1.25 million (exclusive forms for foreign trade surveys). The central statistical General Business Register (GBR) is used in nearly all cases for selection of the units and for mailing. It regards especially the selection for the so-called institutional statistics for which a unit is considered in a holistic way, that is the unit with all its variables is classified and counted according classifications as assigned to it according the GBR. This has a positive consequence for the burden because a unit can only be selected once for a specific kind of statistics. For example it is impossible that a unit active in both trade and transportation will be selected and asked to supply data for both trade statistics and transportation statistics. The institutional approach is an actor-oriented one in which the behaviour of the unit as a whole is to be considered.

That is in contrast with the so-called functional statistics for which, in principle, all trading or transportation units belong to the population for selection. It does not mean that no functional statistics are compiled at Statistics Netherlands. But, considering response burden, the difference might be important because more secondary sources for data input are available and already used especially for compiling functional statistics. Surveys for foreign trade statistics are still to be considered as functional ones. Special surveys were introduced as of January 1993 because of the introduction of the Intrastat system. About 360,000 questionnaires had to be mailed to enterprises directly, whereas before foreign trade statistics were compiled from data collected by the custom administration. A special frame has been set up derived from the VAT (Value Added Tax) files of the tax administration in which indicators on foreign trade are registered.

The current model of the GBR stores information on whether a unit has been selected for a survey. Until now nearly all surveys are statistic oriented, which means that for each basic statistic a separate questionnaire is used for data collection.

The calculated average values in tabel 1 are unweighted ones. It might be clear that there is a wide variety in kinds of questionnaires. In terms of burden, filling out questionnaires varies from very simple and less burdensome to very complex questionnaires with a heavy burden to fill them out. Frequent, e.g. monthly surveys are mostly quite simple, while in annual surveys very detailed information on production or financing is asked. This means that information on the number of mailed out questionnaires is important and interesting, but not decisive for the burden. The number of received envelopes with questionnaires greatly influences the perception of burden however.

For measuring the burden a more adequate indicator should be used. The best one would be what it costs to complete questionnaires. As will be argued in the next paragraph measuring the costs directly is difficult because of a lack on available information. That is why the choice was made for the time, i.e. hours or minutes, spent by enterprises on reporting for statistics. The next paragraph will describe several ways of measuring the burden.

3. WAYS AND METHODS FOR MEASURING AND MONITORING THE BURDEN

To measure the burden an adequate indicator is necessary. Adequate means that the indicator must be appropriate and that there are real possibilities to get sufficiently reliable information. For the burden especially the costs spent for form-filling are relevant. For aggregation purposes it is also necessary to have an indicator that is comparable for all enterprises. Costs can be analysed by its components. They result from the formula:

Costs per form-filling = minutes spent on form-filling x salary costs per minute.

Total costs can be derived in several ways:

Enterprises calculate or estimate their total costs for form-filling which is the basis for aggregation;

- Enterprises calculate the time spent on the form-filling which is the basis for aggregation;
At macro level the total time spent will be multiplied with average salary costs;
- The statistical office investigates the average time spent on form-filling per kind of form;
Total costs per survey (by kind of form) are the result of:
Number of forms x average form-filling time x average salary costs. Adding up the total costs per survey results in the total costs.

But what would be the relevance to express the burden in money for the purposes of reducing response burden? Comparison over time would need a correction (deflation) for changes in salary costs. This is an important reason that for monitoring the reduction it is more likely to express the burden in time spent. For all methods the logical reference period is a year. This can give problems in the case of surveys with a lower frequency than once a year. A solution is to estimate an average burden on an annual basis. If for example there is a biennial survey, the annual costs are half the survey costs.

In The Netherlands several methods have been applied recently.

With reference year 1991, Statistics Netherlands investigated the time spent for form-filling by a separate sample survey related to a statistical survey. For reasons of objectivity this was done under supervision of an independant accountant. A sample was drawn from the group of enterprises to be surveyed. The selected units were asked about total time spent on completing the statistical form in question. They were also requested to answer questions on the total costs, i.e. mainly salary and computer costs, or costs for completing by third parties such as accountants or bookkeepers. It turned out to be a problem to answer to the questions on the form-filling related costs. Most enterprises answered the question on the time spent in minutes. It was the intention to include all the time it took, including the time for opening the envelope, reading the explanatory notes, looking up the data, etc. About 20 percent of the respondents mentioned that they did not complete the form themselves, but had sent it to the bookkeeper or accountant, which would result in a bill. All surveys with reference year 1991 were involved in the survey on burden. The survey followed the stratification of the statistical surveys, mainly stratification by activity and size-class. But there also was a stratification to the kind of forms automatically. The survey

consisted of about 20,000 mailed out forms with a response rate of about 50%. From that survey, which did not include agriculture and foreign trade (the last one did not exist in 1991), it was estimated that the burden was about 250 person-years for the surveyed population. Agriculture was excluded because most data collection for agricultural statistics is being done by or in cooperation with the Ministry of Agricultural Affairs. That data collection is mainly for administrative purposes while the statistical use of it is considered a secondary goal. This situation might change in the future. The burden for agricultural data collection is estimated at 50 persons-years. Data collection for foreign trade statistics is quite new because of the introduction of the Intrastat system. It is estimated that the burden for the new data collection is about 210 person-years for 1994. So in total the burden for statistical data collection at private enterprises and institutions must be estimated at about 510 person-years.

The survey on burden gave information on burden per kind of form; this varied from a few minutes for simple questionnaires to many hours for the complex ones. Another aspect influencing the burden, which has not yet been investigated, but may be important is the method used for data collection. In the survey carried out only the burden of mailed questionnaires was subject of investigation. This seems logical because enterprises are obliged to complete forms for economic surveys. It is a tradition, however, that field officers of Statistics Netherlands assist many enterprises in completing forms. That reduces the burden substantially. What also can make a difference is whether a survey is carried out via mailing out forms or by telephone. The latter alternative can be useful for relatively simple questionnaires asking questions on a few variables. These mode effects also have to be considered in the policy of burden reduction, but there is insufficient information on those effects. Separate attention must be given to mode effects because of the introduction of data collection by EDI or by replacing direct surveying through the use of information from registrations kept by other (governmental) administrations. In such cases, traditional ways of data collection will change completely and a new interpretation of the term questionnaire will be needed. Introduction requires complete business process redesigns. Time spent for completion will no longer a good indicator for burden then, probably.

For the reference year 1993, a Dutch research institute (EIM: Economic Institute for Small and Medium Enterprises) investigated the total administrative burden in 1994. In a sample survey they asked enterprises questions on the total costs divided into some components, among which the burden because of providing Statistics Netherlands with data. Respondents were confronted with retrospective questions about items and components which cannot be derived from bookkeeping directly. Respondents often had to estimate. The survey results show that up to 4% of total administrative burden is to be considered as burden because of data collection for statistics by Statistics Netherlands. Most of the burden is caused by the compulsory supply of data for tax purposes and social security.

Apart from the difference of the reference years, the results from the two surveys were completely different. From the EIM-survey a much higher level of burden was estimated than from the direct form related approach. It was impossible to analyse the differences. It will be clear that a different measuring approach leads to different results, because of the different method and the different instruments used. The different way of dealing with the non-response also is a major complicating factor for the analysis of the different results. It will not come as a surprise that Statistics Netherlands is supporting its own method more than the alternative one, although we also consider the margins of the results substantial.

Relating to the methods mentioned above, the EIM used the first method and Statistics Netherlands the third one. The conclusion is that both methods are not fully reliable although the method used by Statistics Netherlands is more closely related to the basic source of information

with the real respondent and the form-filling period. There is a real danger that in the other approach all questionnaires for statistical purposes are retrospectively considered questionnaires from Statistics Netherlands and that irritation of enterprises on burden earlier leads to overestimation than in the case of direct form-related research. The second method was not used, but is considered close to the first one.

What kind of method is the most adequate also depends on the applications of the results of measuring the burden. The most important one in the Dutch situation is to have an instrument to monitor the burden over time. This is necessary for reporting on the reduction to the Minister and the Parliament. The starting situation must be determined in a way that burden reducing measures can be related to that fixed initial burden. Statistics Netherlands had to report before the end of May 1995. Because of a lot of uncertainties about the initial level of the burden, and about sufficiently concrete plans for reductions, reporting was done in a very aggregated way, indicating burden reduction as targets which have to be reached before the end of 1997. To gain more insight, a quick internal investigation was done using the results of the 1991 survey as a starting point. From that investigation a list of concrete plans for response burden reducing measurements came available. That led to a report to the Minister of Economic Affairs with quantitative information as shown in table 2. A person-year is considered to have 1,740 working hours. As the table shows concrete proposals are made for some statistics, but an additional reduction of 10 thousand hours must be realised for others not specified in the table.

Table 2: Proposals for reduction of the response burden (thousands of hours) *)

	Burden per year		Targets of reduction				Total Reduction	
	January 1 1994 (Thousand hours)	December 31 1997	1994	1995	1996	1997	'94-'97	%
Foreign trade	370	310	10	30	10	10	60	16
Industrial Production	200	190	0	0	0	10	10	5
Labour and wages	70	50	0	0	10	10	20	29
Subtotals	640	550	10	30	20	30	90	14
Total	800	700					100	12

*) The figures mentioned are rough indications, strongly rounded, and exclusive of agriculture

To come to a more structural and stable approach for measuring and monitoring the response burden caused by Statistics Netherlands, Willeboordse e.a. made proposals for such an instrument by defining a kind of response burden barometer, which aims to be a method for a permanent estimate of (changes in) the response burden for enterprises. In the proposal the response burden is defined as the real total costs made by the enterprises in a year for completing CBS-questionnaires. Real costs means that the collecting mode and non-response effects have to be taken in account. That is in contrast with a potential theoretical response burden for which the line would be taken that all units involved in a survey would respond without any assistance of the statistical office. Both a gross burden and a net burden is defined to take the phenomenon non response into account. The gross burden is important for estimating effects of measures beforehand, while the net burden is important to judge the total real burden afterwards. The difference between the gross burden and the net burden can be interpreted as a quality indicator.

For the implementation of the response burden barometer the proposal was to choose the time needed for completion a questionnaire as a proxy for the costs. Furthermore it is proposed to have an average amount of time for completion per kind of questionnaire with a possible and

recommendable stratification by enterprise size. Total time spent per kind of questionnaire by enterprises for providing statistical data results then from multiplication the number of forms with the average completion time. Total burden in terms of spent time results from the aggregation over all types of questionnaires. In summary, all desired specifications can be built in the barometer proposal. Most important for the creation of time series on response burden (e.g. an index time series) is that the choice of the method to establish of the burden level will be kept stable over time.

At the moment of writing this paper, a response burden barometer as described is being introduced. A separate organisational unit within the Division for Data Collection has been created, initially staffed with two high-level persons. The initial burden measurement for the barometer is being done with 1995 as the statistical reference year. With starting point the complete list of statistics and surveys, the results of the 1991 burden survey and the results of the investigations for the report of 1995 to politics, deliberations are going on with the several statistical departments within Statistics Netherlands to determine the burden per statistic and survey by the necessary strata. This means that expert estimates are confronted with the earlier results. Meetings were held with all statistical sectors, in which the burden was discussed. It is not surprising that the outcomes of these deliberations, which sometimes have the character of negotiations, again differ from previous results. The big advantage of this approach is that commitment of the survey managers can be obtained in this way. The survey managers also get more aware of the need for reducing response burden. The inventarisation concentrates on the number of forms in a survey and the estimated completion time in relation with the collection method, taking into account the level of assistance with completing questionnaires given to enterprises. The information for initial settings is in a stage of validation now.

Additionally a mutation form has been developed. That form is to inform about changes in the number of forms in a survey, in the method used and the consequences for the burden, in the content of the questionnaire with its consequences for the burden, etc. The impact of changes in the content of a questionnaire can be investigated in a (pre)test stage of the adapted form. The mutation form also has information on usefull response. Survey managers must send that form to the unit that maintains the barometer. The succes of the barometer depends on the support, the commitment and the discipline of the survey managers.

The burden will be monitored in the future according the described method. It is expected that the level of the burden must be verified from time to time in a way like the 1991 survey, adapted for requirements of the barometer. After some years a revision will be necessary. Using only the information on changes will lead to a bias for the absolute level of the total burden after some period. Also the expected drastic changes in methods for data collection will make a periodical update necessary.

Although the barometer indicates the annual burden, the intention is to monitor on a quarterly basis. It means that the impact of changes in monthly or quarterly surveys is shown at least on a quarterly basis.

Finally it is worth mentioning another method to measure the burden at enterprise level more accurately, which was developed by the EIM mentioned above. In a laboratory setting, the process of completing a form is broken down into its components. It is a method often used for labour analysis too. For all components the used time is observed and established using a stopwatch. This method seems very accurate, but it is still not proved that the method results in a less biased estimation than the other methods. The method also seems very costly and time-consuming for the purpose of an initial establishment of the level of the total burden according the desired stratification and in relation with the large variation of questionnaires in combination with the used surveying methods. Maybe the principles of the method are valuable for investigating the impact of changes in the stages of (pre)testing new or changed questionnaires. The method will not be

dealt with in more detail.

It is open to arguments whether or not measurements taken by enterprises themselves count as burden reduction. A burden reducing policy should have as a starting point a reduction *ceteris paribus*. Measurements by enterprises will lead to an additional burden reduction for them. It seems very difficult, however, to correct for these effects in follow up surveys to establish the level of the burden after some years again.

4. THE INSTRUMENTS TO REDUCE RESPONSE BURDEN

Instruments to reduce response burden can influence the burden at several levels:

At the macro level

- At the micro level:
 - quantitatively
 - qualitatively (mainly perception)

The distinctions are not necessarily exclusive classes. Most instruments will have effects on more than one. Measures with quantitative effects also generate qualitative effects in most cases. At the macro level a distinction has to be made between instruments that do not effect the quality the statistical output of statistics and those that do.

For target reporting to the government macro level effects are most important. Measurements to reduce the burden at the micro level, i.e. at enterprise level, do not necessarily effect the burden at the macro level. In practice Statistics Netherlands is paying attention for reducing the burden at both the macro and the micro level. At the macro level a qualitative effect can result because of fewer complaints by enterprises towards the politics and towards the organisations of enterprises.

Let us consider the macro level first. Lowering the burden can be reached mainly by:

- lowering the number of questionnaires;
- reduction of the time spent on completing the questionnaires.

The number of questionnaires can be reduced in several ways, preferably by replacing surveying by questionnaire by data collection via an alternative method, such as the use of already existing or new registrations becoming available. This kind of reduction of questionnaires has to be researched permanently. Another one is the use of automatic derivation of data from the enterprise administrations without questionnaires as an intermediary, using EDI applications. These subjects will be dealt with in the next paragraph.

Other ways for reduction the number of questionnaires are the replacement of full enumerations by sample based surveys or the reduction of sample ratios when sampling methods are already used.

These burden reducing measurements will effect the quality of statistical output in general. Without output effects it would be justified as result of an improved sample frame, e.g. an improvement of the quality of the Business Register. Before making decisions on reducing sample sizes, the consequences for the statistical programme have to be adopted. In the Netherlands, the Central Commission for Statistics (responsible for the statistical work programme) has to approve. The number of questionnaires can also be reduced by lowering the frequency of a survey. This will influence the statistical programme. Another interesting way to reduce the number of questionnaires is by combining existing questionnaires, which does not lead to a decreased dataset

but can lead to a net decrease of burden.

A number of the described methods for lowering the number of questionnaires have been applied since the mid eighties sometimes with dramatic consequences for the statistical programme. Users are complaining about the no longer availability of certain data and are requesting reparation. That can be done in the case of new opportunities.

A reduction of the time to be spent for completing a questionnaire can be reached by:

- deleting questions, with consequences for the programme;
- improving the quality of wording the questions;
- changing the method of surveying, especially the method of data collection.

The first option is a very radical one, with clear effects. Improving the quality of questions results both in a reduction of completion time and perception. Quite a new policy at Statistics Netherlands is to ask questions in such a way that they can be answered directly from enterprise administrations and not necessarily in terms of statistical definitions. It implies that the translation into statistical concepts must be done by CBS staff instead of the enterprise. This can be considered a kind of assistance, because a part of the burden is taken away from the enterprises and is put on the shoulders of the statistical office. More attention is paid to drafting new questionnaires. Carefull (pre)tests can give insight in the consequences. Timely involvement of enterprises in drafting can lead to ideas for improvement.

Statistics Netherlands already has a long tradition in coordination. Questionnaires must be harmonised and tuned mutually where possible as a part of tuning the whole survey designs. So the definition of a variable must be the same if that variable is asked in more than one questionnaire. The method of surveying must be chosen, taking the burden for the respondents in account consciously. Efficiency considerations for the office were perhaps too prominent criteria until now. The use of data already collected for other purposes must be considered at a very early stage. Also if those data do not exactly meet the requirements, research should be done or a translation can be made using some method. Sometimes lower requirements should be accepted if this has substantial positive effects on the burden. Finally it is the task of a statistical office to develop tools to charge enterprises as little as possible. For enterprises it is important that form-filling is as easy as possible, and that it can be done at minimal costs. This requires a flexible approach. The development of tools for data collection via EDI methods is important in this context because it is expected that they will lead to a substantial burden reduction.

Measurements taken for burden reduction at the macro level have a direct impact at the micro level. Additional tools have been developed for reduction at enterprise level. As is shown in table 1 there is a variation of mailed out questionnaires according the size classes of enterprises. Statistics Netherlands developed tools to spread the burden as evenly as possible over the enterprises, which are effective for the small enterprises in particular. In the process of sampling, burden indicators are assigned to the selected enterprises. In next selections units with lowest existing burden are selected first. These tools are built in in the Business Register system. The method results in quantitative effects at enterprise level. As mentioned before honouring the wishes of enterprises has positive effects, e.g. giving assistance at request. For the large enterprises, the tool of account-management is under development, and for a number of enterprises it is already operational. All data collection from those enterprises is done via the assigned account-manager. These enterprises are informed on data to be collected in an early stage. This tool has been received very positively by enterprises. Unfortunately, it regards only a few enterprises.

Improving qualitative aspects in data collection will improve the perception by enterprises and leads to a reduction in perceived burden. It is the task of the statistical office to convince enterprises of the necessity of the data collection and to facilitate and compensate for them if possible (no payments). Some ideas are under consideration.

- The introduction of the one counter idea, which means that an enterprise has contacts with only one staff member of the statistical office or with only one organisational unit;
- Improvement of information on what surveys to expect so enterprises can prepare themselves in time;
- Giving feed-back on statistical results so enterprises can see what has been done with the data provided and can benefit from it.

Improving the perception has also the attention of other Administrations in The Netherlands. Good mutual communication can lead to ideas for further improvements. The tax Administration developed the slogan: "We can't make it nicer, but we can make it easier". This slogan was aired many times in combination with information on ways for easier declaration and handy tips on tax returns.

From nature statisticians are afraid of changes in data collection, because of the danger of discontinuities introduced into trend data in timeseries. Changes must therefore be implemented carefully. Research on the effects on continuity in timeseries must be part of research for other methods. Gradual changes are feared most because then timeseries do not express real changes but also non real changes of modified data collection procedures, which can not be isolated and explained.

In contrast with the burden reduction policy, there are also developments which result in an increased burden, for example in the case of an extension of the statistical programme. The European Union adopts many regulations for statistics which result in an increase of the programme and the burden as a consequence of the required new data collection. It means that for national purposes the reduction must be more, or that those requirements must be considered as autonomous, i.e. only to be influenced at supranational level. Until now the requirements resulting from those regulations are considered part of the national statistical programme and playing a major role in balancing response reducing measurements.

The reported targets for burden reduction as shown in table 2 can be met using a mix of instruments. A relatively low reduction can be realised before the end of 1997 for many data collections, but on balance it will be notable and maybe more than required strictly.

The main reduction must be in the three statistical areas: foreign trade, industrial production, and labour and wages.

For foreign trade statistics data collection changed on 1 January 1995 because the threshold was raised. Units trading for less than 400,000 Dutch guilders with other countries within the European Union are no longer surveyed. This reduced the number of questionnaires by about 60,000 a year. For these enterprises, statistical estimates are calculated now using information from the VAT-registration. Furthermore instruments have been developed to report on foreign trade data more easily, the so-called IRIS system, see next paragraph.

Questionnaires for industrial statistics are adapted so that they will be easier to complete. Detailed reporting on commodities has been reduced and some questions on employment have been deleted from the questionnaires. This information must be imported from data collection for labour statistics. Further reduction is expected from the introduction of EDI and the use of fiscal data already available.

Statistics on Labour and Wages are being compiled using data collected in a totally different way. Data will be collected as these are already stored in computerised enterprise administrations using popular software packages. It is the intention to build modules for statistical data supply into those packages. The response burden will be reduced in this statistical area by at least 30% before the end of 1997.

5. DEVELOPMENTS ON AND INTRODUCTION OF EDI DATA COLLECTION

As mentioned in the previous paragraph, it is expected that new possibilities for data collection because of technological developments will lead to new opportunities and challenges to reduce response burden. Especially new ways for electronic data capture (EDC) and electronic data interchange (EDI) are to be considered. Electronic data capture as such has already been introduced and implemented for a long time. That regards mainly data collection for the functional statistics, which are highly item- or variable oriented. These data can often be derived from existing files kept by organisations and administrations. For example, data on production of and trade in fruit can be collected at fruit auctions. But also for institutional statistics there are cases that information is used that already is available somewhere else. Updates for the Business Register are processed in an automated way by processing data derived from the files of the sources, the Chambers of Commerce and the Social Security Boards. The implementation of these ways of data processing has led to a large reduction of staff size at statistics Netherlands since the mid eighties.

The methods of data collection in an electronic way at individual enterprise level are quite recent. The nature of EDC and EDI can vary from a very narrow approach to a very broad one. Narrow is that only the medium for data collection will be changed, e.g. from a paper questionnaire to a questionnaire on floppy disk. Nothing has changed in the principle of data collection, although the method can lead to improvement of efficiency both for the statistical office and for the enterprise. The statistical office gains because data entry is no longer necessary, and received data are consistent because of potential built-in checks. For the enterprise data entry is still required but the electronic questionnaire can be more efficient because of e.g. calculation modules, translation facilities, automated checks, etc. For surveys among households CAPI, CATI and CASI² applications are quite usual. For enterprises they are in an early stage. At the moment the main application is for data collection for foreign trade statistics. Enterprises are encouraged to use the facility offered by Statistics Netherlands, i.e. to report using the IRIS module, a BLAISE³ based data entry system developed for foreign trade statistics According the described method. Data can be sent to CBS by modem or by floppy disk. The number of enterprises using the package is about 15,000. To reduce the burden, enterprises can decide to develop a automatic translation from the trade administration into the IRIS-module themselves. But this kind of burden reduction is not fully considered a reduction from the statistical office.

It must be possible for enterprises to report in a way that is most convenient for them. The medium may not be a problem. If an enterprise prefers to complete a questionnaire on floppy disk the statistical office should facilitate that. What is important is that the method of electronic data

² CAPI: Computer Assisted Personal Interviewing; CATI: Computer Assisted Telephone Interviewing

CASI: Computer Assisted Self Interviewing

³ BLAISE is an at Statistics Netherlands developed software package for computer assisted data entry. Questionnaires can directly be defined in BLAISE with advanced possibilities to build-in procedures for checking data and routing questions.

collection described here, is statistics-oriented. In principle only the medium differs. The electronic medium mainly has positive efficiency effects for the statistical institute.

New more burden reducing developments are data collection methods which are more item- or variable oriented. These methods are related to the available bookkeepings of the enterprises, and to already existing administrations, e.g. the fiscal ones. If it becomes possible to get administration-oriented information available the challenge will be to combine information derived from several sources into statistics. This way of data collection will lead to drastic changes in the statistical processes and it will require new infrastructures and statistical skills at the statistical office. Statistics Netherlands is investigating this approach at the moment. There are three ways, which can be considered complementary, being researched.

- a. Research for availability and usefulness of required data for statistics in existing registrations kept by other administrations (secondary data collection);
- b. Research for the implementation of modules for statistics in software packages for enterprise bookkeepings;
- c. Research for possibilities of automated direct extraction of data for statistics from the applied bookkeepings kept by enterprises.

These three ways receive full attention at Statistics Netherlands. They should be alternatives for frequent data provision and for collection causing substantial burden.

This means that Statistics Netherlands is drastically changing its data collection policy. There is a long tradition of collecting most of the data at the enterprises. The pressure to reduce the burden has accelerated the process of investigating alternatives. Some countries of the European Union such as Denmark and Sweden have the opposite tradition where almost all statistics are compiled using administrative files.

Ad a. Exploring the use of data from existing administrative registers concentrates on the fiscal administrations. Studies are being done on whether the use of VAT data can be an alternative for surveys on monthly turnover. These are high frequent surveys. Replacing them will lead to a notable reduction of burden both in quantitative and qualitative sense (perception). For one of the most heavy surveys, the survey of finances of enterprises, pilot studies are being carried out on the use of information of the corporation taxation system. The use of this information is considered an alternative for collecting the data at the small and medium sized enterprises, i.e. with a total balance sheet total below a specified level. For the large enterprises direct surveying will stay.

The big advantage of the use of files of administrations is the comprehensiveness and the quality of the data, because they are often checked for tax purposes e.g. Disadvantages like different definitions of units and variables, timeliness of data availability etc. may be known. But the problem to be most worried about, is that the size and content can change because of legal changes. In changing processes it is necessary that the importance for statistics will taken in account.

Legal support is necessary for using information from administrative sources legal. The new CBS-Law, just discussed in Parliament, has an article stating that administrative files must be accessible for compiling statistics by Statistics Netherlands. This opens up negotiations with administrations on the way access can be brought in practise, procedures and costs.

At b. is at the implementation stage for data collection on labour and wage statistics. Many enterprises let maintain their salary administration by firms which are specialised in salary administration. These firms are often using standard popular software packages. CBS negotiated

with the developers of these packages to get statistical modules built-in for reporting data on salaries to CBS. The definitions of the statistical variables had to be adapted to some extent, but now most data on salaries are coming in electronically. The first experiences indicate data of good quality which come available very early. Instead of samples the firms report on all enterprises they administer. Response burden has nearly been deleted for this aspect of labour and wages statistics, while data for much more units are becoming available.

The alternatives a and b need much more research on continuity effects as statisticians are very afraid of discontinuities introduced into trend data in timeseries, especially on gradual discontinuities over longer time.

At c is operational in pilot projects. Statistics Netherlands developed a tool, called EDISENT (Electronic Data Interchange between Statistics and ENTERprises). A first pilot was held in 1994, to investigate automatic derivation of data from enterprise administrations for statistics and send it electronically to CBS. The pilot was held with about 10 enterprises of the rubber and plastic industry. The results suggested continuation of the development. After installation the module, providing to CBS can be done automatically. The module should, however, become more easy to install. The tool has been fully adapted, and in April 1996 a next pilot will be held with more enterprises, including bookkeeping firms, and collecting data for more statistics. The module is applicable for financial and related enterprise bookkeepings. The questions which can be answered from those bookkeepings are selected from all statistics. This led to a so-called combi-questionnaire. The next pilot is to be considered the start for implementation because it will be impossible after the installation of the tool to collect with paper questionnaires again. Therefore a working group is preparing the implementation of this kind of EDI-data collection. The success of the introduction of the tool depends on the initial investments required to install the module. Every effort is made to make the module as user- friendly as possible. Also field officers of CBS are trained to assist in installation.

These 3 ways of electronic data collection have in common that data collection is item-oriented in principle. It should be avoided that already available information will be asked twice or more. If an item is to be used in more than one statistic, it will be necessary to create central input databases, containing the administrative data as reported. It is the task of the statistical sectors to transform the information into statistical data. To do so the central input databases must also contain meta information on the stored data. Also the data collection procedures must be redefined. If the results of the research efforts are as positive as they look now, we will enter a new period of data collection with much less response burden for enterprises. But it will still take time to reach the desired situation.

Although it is very important to avoid discontinuity effects in timeseries because of changes in data collection methods it will not be possible to avoid that in a transition period a mixed mode approach is the only way to introduce new methods for data collection. The effects on continuity because changed methods have to be estimated as good as possible. The introduction of check surveys can be helpful. In check surveys meta information is gathered on the meaning and interpretation of the collected data, like definitions etc. Another complex factor will be the tuning of the different modes. The mentioned central input databases must facilitate for that. The working group preparing implementation of EDI data collection must do proposals to solve a lot of problems. As starting point must be chosen for the view that actions must not charge enterprises more.

For an optimal development of burden reducing EDI-actions an EDI-strategy must be defined. New infrastructural instruments are needed for this. At Statistics Netherlands a list of statistics is

available. In a item oriented approach, also a list is needed of variables in questionnaires with the definitions. Initiatives are taken to set up a questions bank, i.e. a database containing all questions put in questionnaires with information on definitions of the variables, the statistics for which the questions/variables are needed etc. Also a burden indicator per question can be added. From such a question bank, well-defined combinations of questions can be derived in the context of item- or administration oriented data collection. From that it will also be possible to set priorities in developing burden-reducing actions, and double questioning can be avoided more easy.

But, EDC and EDI are not the panacea for all data collection. A lot of information can only be collected in other ways. Not all enterprises will be willing to use EDI tools. Furthermore, not all collected data can be derived from administrations, e.g. data on opinions and expectations. Many problems have to be solved and quality of statistics must be kept in mind. The largest enterprises will still need a tailor-made approach in the future.

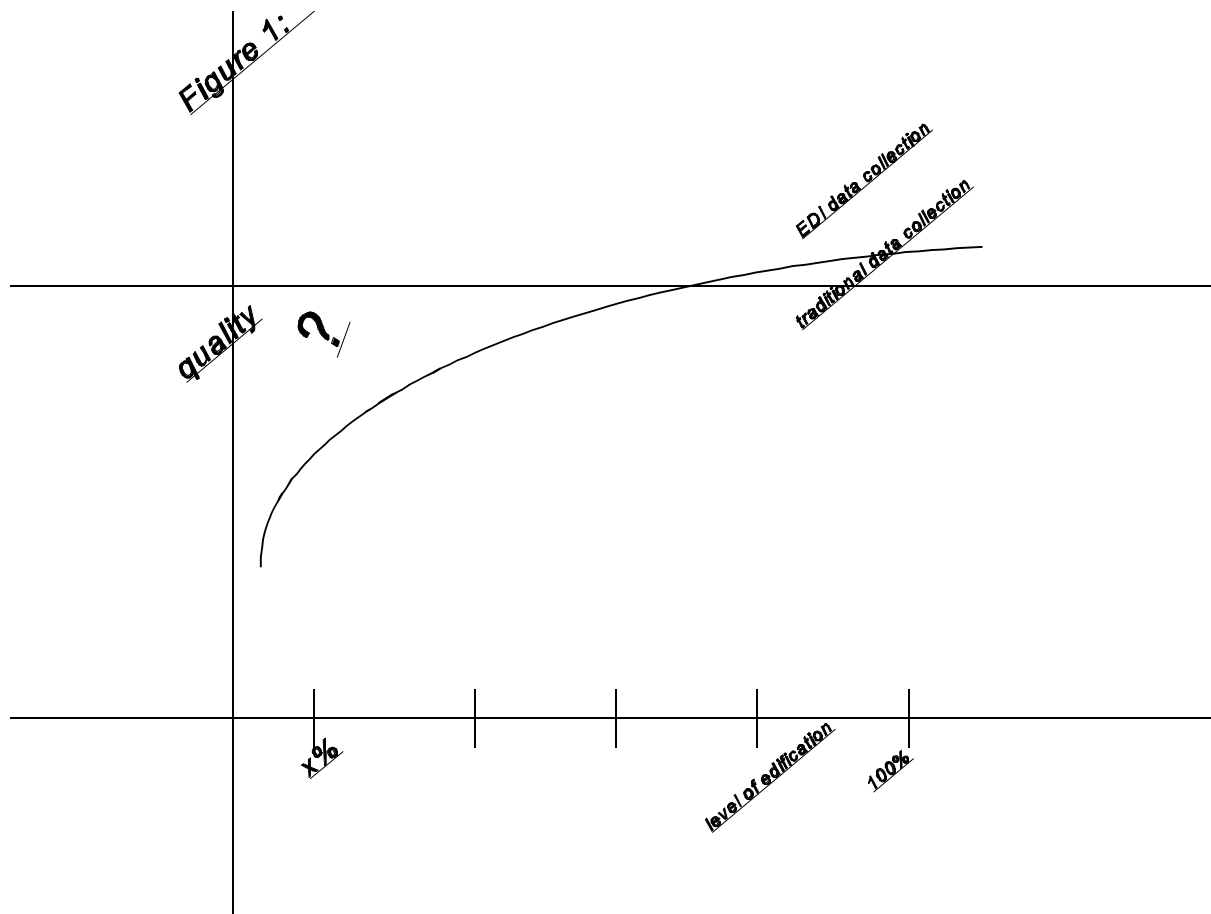
6. QUALITY ASPECTS AND THE ROLE OF THE BUSINESS REGISTER

The desired situation is one in which more statistics of better quality can be compiled with a minimum of burden for enterprises, and at minimum costs. It is not unthinkable to reach the present quality of statistics with less observations because of higher data quality. That could be shown as is done in figure 1. That figure expresses that if, for example, 80% of the present data collection could be replaced by EDI-data collection, the quality of resulting statistics would be equal to quality of the statistical information from the traditional data collection methods. The question mark indicates attention during the transition period for continuity policy, the complementary methods used, including the right balances. An additional aspect is that of efficiency in data collection and in compiling statistics as parts of quality.

The developments cannot be stopped. Once enterprises have experienced a reduced burden they will not be willing to return to the earlier situation. Much more CBS-staff capacity will be involved in analysing and combining results from the new modes.

During the started period of changes which aim to reduce the burden for enterprises in combination with continuing high quality statistical programme good monitoring instruments and stable reference points are necessary. In the past, much attention has been paid to improving statistical concepts, definitions of statistical units and of variables. In the processes described in the previous paragraph, the problem of the unit identification is to be solved carefully. Statistical units are defined in the Statistical Business Register. This register plays an important role in the developments, which will lead to more use of data from registrations. The register is the link between the observation units, i.e. the units for which data are collected, and the statistical units, i.e. the units which are the basis for compiling statistics.

Improvement of the quality of the register as a sample frame for surveys makes it possible to reduce sample sizes and so response burden without worsening the quality of statistics. There are new initiatives to improve the quality. Research is being done for the introduction of fiscal information as an additional source. In the present register, many units are inactive. If a unit is not paying tax during a specified period, that unit can be considered out of business. The use of such information can lead to a better derivation of the populations from which survey samples can be drawn.



Also the maintenance of a Business Register gives a burden for enterprises. Statistics Netherlands is not the only organisation keeping a register. Also the Chambers of Commerce, the Tax Administration, the Social Security Boards are, among others, keeping a business register with similar contents. Enterprises are asked to answer identical questions for register maintenance. At the end of 1994 discussions started on closer cooperation, which can lead to more national coordination and to a reduction of the burden for enterprises. But cooperation is also needed because of the linking function. If fiscal information will be used in the future for statistics the business register must facilitate. One of the most important support is that in the business register the fiscal structure of units can be translated to the statistical unit structure.

In The Netherlands we are handicapped however because of a lack of a unified identifier for units to be used in all official registrations. In 1995 tools were developed for matching the units from the fiscal register with the CBS business register. That linkage is a condition for the use of other fiscal information for statistics, in order to maintain quality. What has been said for fiscal information, is also applicable for the use of information from other registrations and for the introduction of primarily EDI.

7. THE AGENDA FOR THE FUTURE

The focus on administrative burden will not diminish in the future. Enterprises must be convinced of the usefulness of the efforts requested, and of providing data for statistics. A period of conscious data collecting has begun a few years ago. This requires a kind of cultural change, also for all staff of Statistics Netherlands. A strategy for the medium and long term is being discussed. It is clear that enterprises should be relieved from the burden as much as possible. Awareness of the problem of response burden, however, must not be a national one. In adoption international regulations the consequences for burden should explicitly be taken in account. If enterprises are

convinced of the intention and the efforts to minimise the burden it is expected that they will be more willing to cooperate in data collection and data provision. But a society without any burden will be an utopia.

In the ideal situation, the small enterprises are nearly fully relieved from providing data on production and financing processes. This information must can be derived from fiscal administrations, eventually in combination with a minimum of additional surveys.

For the medium sized enterprises, user-friendly tools will be applied so that information can be derived from the enterprise administrations electronically in combination with the use of data already available in administrations.

For the large enterprises, tailormade tools will still be applied. Assistance must be available, introduced now via the tool of account management.

For of the use of data from registrations of governmental administrations, agreements must be reached on continuity and quality. There is a danger in the use of those administrations. The most recent example is the data collection for foreign trade. Custom formalities disappeared on January 1, 1993. For statistics a new way of data collection had to be set up. In optimal situations, an administration will also collect and register information for statistics if it does not conflict with the purpose of the administration, as is done on forms for VAT declaration by the fiscal administration, for the purpose of foreign trade statistics.

Data will be collected in an optimal mixed mode approach, no longer statistic-oriented but item- or administration oriented. In data collection this will lead to a fading difference between functional and institutional statistics. Collected data will be stored in (central) input databases from which data can be derived for statistical purposes by all statistics compiling units. It means that the same data will be collected only once. Instead of multiple data collection a situation will emerge of multiple use of collected data. This model can be shown as is done in figure 2.

The figure expresses a situation of a complete mixed mode approach, to be explained as follows: X means the traditional way of data collection, mainly by paper questionnaires;

Y and P indicate data provision from administrations and registrations in an electronic way without a special module for it;

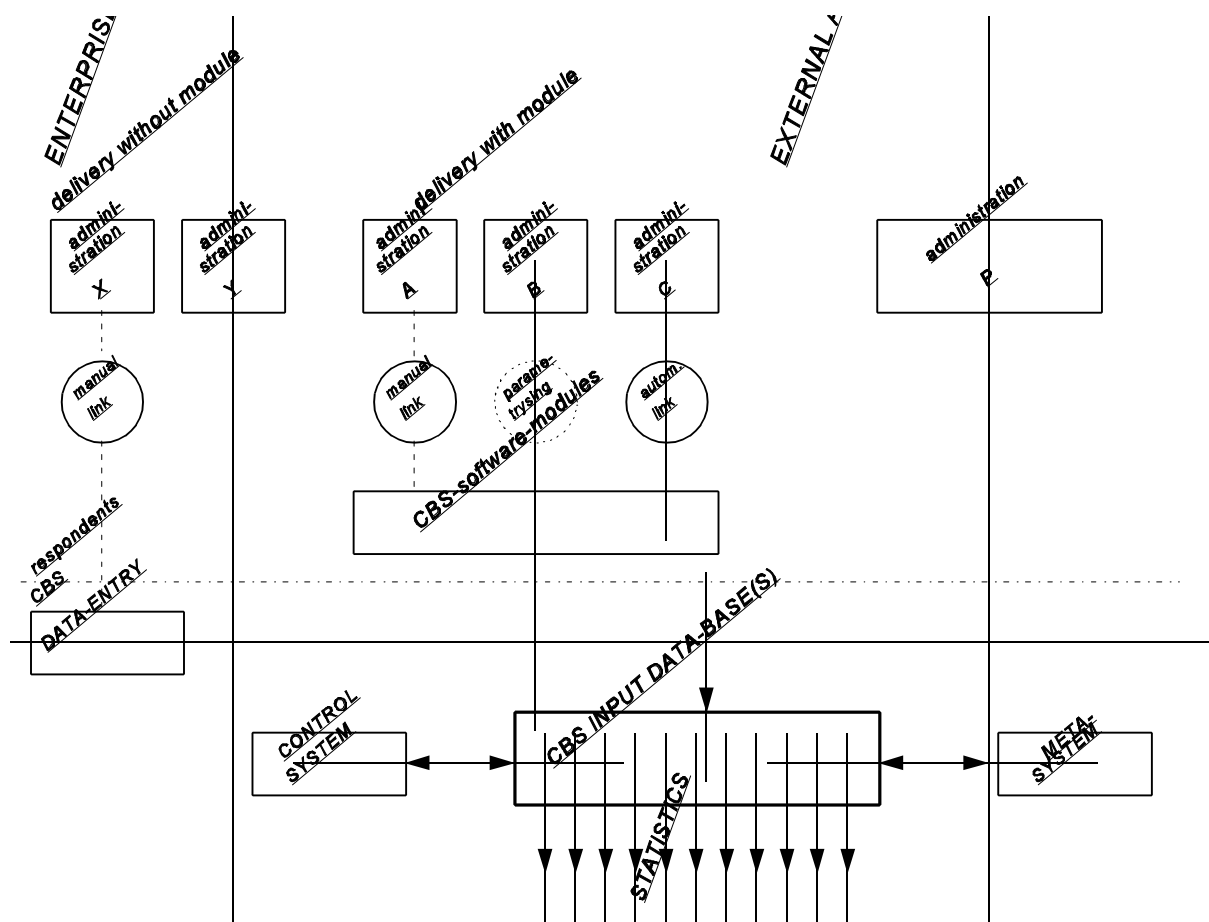
A is a concept in which an efficient data entry module is offered to the respondent;

B is the concept of the CBS EDISENT tool in which a translator from administration data into answers on questionnaire questions must be installed once;

C is to be interpreted as a way in which an enterprise loads down its administration and sends it to CBS which has the responsibility for transformation into statistical concepts.

The functions of the monitor and meta system are described in paragraph 5.

Figure 2: A model for future data collection.



Final remarks

Central monitoring of the response burden is necessary. Ideally that is not restricted to Statistics Netherlands, which is in favour of a central coordination point for the entire government. Proposals in this area were made to the Minister, but it is not clear who should be the central monitorer?

In the future new possibilities for data collection will become available. So the way of the most efficient and most respondent-friendly method of data collection will unquestionably stay a challenging item.

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